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ABSTRACT ✓

FACTOR IX PROTEIN

The blood-clotting protein, factor IX, is synthesised in the body in liver cells, where it undergoes three distinct types of post-translational modification before it is secreted into the bloodstream as a 415 amino acid long protein. It is therefore a difficult protein to produce by recombinant DNA technology in a highly biologically active form. Nevertheless, such a result has been achieved by the present invention in which typically factor IX cDNA in a plasmid is linearised and inserted into an expression vector having a promoter sequence of SV40 early gene, an SV40 polyadenylation sequence, the TK/NEO selectable marker and an ampicillin resistance gene. Mammalian cells such as from a dog kidney or rat liver are transfected by the calcium phosphate precipitation method. High levels of factor IX in a fully or near-fully biologically active form, useful as a plasma-free preparation for treatment of patients suffering from Christmas Disease (haemophilia B), are obtainable without recourse to poxvirus vectors which would contaminate the protein.